

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

---

In re Patent Application of:  
Howard E. Rhodes

Application No.: Not Yet Assigned

Confirmation No.:

Filed: 18 AUG 2003

Art Unit: N/A

For: BURIED CHANNEL CMOS IMAGER  
AND METHOD OF FORMING SAME

---

Examiner: Not Yet Assigned

**INFORMATION DISCLOSURE STATEMENT (IDS)**

MS Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

Pursuant to 37 C.F.R. §§ 1.56, 1.97 and 1.98, the attention of the Patent and Trademark Office is hereby directed to the references listed on the attached PTO/SB/08. It is respectfully requested that the information be expressly considered during the prosecution of this application, and that the references be made of record therein and appear among the "References Cited" on any patent to issue therefrom.

This Information Disclosure Statement accompanies the new patent application submitted herewith.

Those patents or publications which are marked with an asterisk (\*) next to the Cite No. in the attached form PTO/SB/08 are not supplied because they were previously cited by or submitted to the Office in a prior application number 09/374,988, filed August 16, 1999 and relied upon in this application for an earlier filing date under 35 U.S.C. § 120.

In accordance with 37 C.F.R. § 1.97(g), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made. In accordance with 37 C.F.R. § 1.97(h), the filing of this Information Disclosure statement shall not be construed to be an admission that any patent, publication or other information referred to herein is "prior art" unless specifically designated as such.

It is submitted that the Information Disclosure Statement is in compliance with 37 C.F.R. § 1.98 and the Examiner is respectfully requested to consider the listed references.

The Director is hereby authorized to charge any deficiency in the fees filed, asserted to be filed or which should have been filed herewith (or with any paper hereafter filed in this application by this firm) to our Deposit Account No. 04-1073, under Order No. M4065.0103/P103-A.

Dated: 18 AUG 2003

Respectfully submitted,

By \_\_\_\_\_

Thomas J. D'Amico

Registration No.: 28,371

Michael Bergman

Registration No.: 42,318

DICKSTEIN SHAPIRO MORIN &

OSHINSKY LLP

2101 L Street NW

Washington, DC 20037-1526

(202) 785-9700

Attorneys for Applicant

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO				<b>Complete if Known</b>	
				Application Number	Not Yet Assigned
				Filing Date	18 AUG 2003
				First Named Inventor	Howard E. Rhodes
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	1	of	3	Attorney Docket Number	M4065.0103/P103-A

<b>U.S. PATENT DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Document Number	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Number-Kind Code <sup>3</sup> (if known)			
AA		*4,374,700	02/1983	Scott et al.	
AB		*5,319,604	06/1994	Imondi et al.	
AC		*5,461,425	10/1995	Fowler et al.	
AD		*5,471,515	11/1995	Fossum et al.	
AE		*5,541,402	07/1996	Ackland et al.	
AF		*5,576,763	11/1996	Ackland et al.	
AG		*5,612,799	03/1997	Yamazaki et al.	
AH		*5,614,744	03/1997	Merrill	
AI		*5,625,210	04/1997	Lee et al.	
AJ		*5,705,846	01/1998	Merrill	
AK		*5,708,263	01/1998	Wong	
AL		*5,739,562	04/1998	Ackland et al.	
AM		*5,757,045	05/1998	Tsai et al.	
AN		*5,939,742	08/1999	Yiannoulos	
AO		*5,708,263	01/1998	Wong	
AP		*6,051,857	04/2000	Midda	
AQ		*5,841,159	11/1998	Lee et al.	
AR		*3,995,302	11/1976	Amelio	
AS		*6,396,539	05/2002	Heller et al.	

<b>FOREIGN PATENT DOCUMENTS</b>					
Examiner Initials*	Cite No. <sup>1</sup>	Foreign Patent Document	Publication Date MM-DD-YYYY	Name of Patentee or Applicant of Cited Document	Pages, Columns, Lines, Where Relevant Passages or Relevant Figures Appear
		Country Code <sup>3</sup> -Number <sup>4</sup> -Kind Code <sup>5</sup> (if known)			
					T <sup>6</sup>

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. <sup>1</sup> Applicant's unique citation designation number (optional). <sup>2</sup> See Kinds Codes of USPTO Patent Documents at [www.uspto.gov](http://www.uspto.gov) or MPEP 901.04. <sup>3</sup> Enter Office that issued the document, by the two-letter code (WIPO Standard ST.3). <sup>4</sup> For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. <sup>5</sup> Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST. 16 if possible. <sup>6</sup> Applicant is to place a check mark here if English language Translation is attached.

<b>NON PATENT LITERATURE DOCUMENTS</b>					
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
	CA	*Fossum, E., "Low Power Camera-on-a-Chip Using CMOS Active Pixel Sensor Technology," 1995 IEEE, pps. 74-77.			
	CB	*Fossum, E., "Architectures for Focal Plane Image Processing," Optical Engineering, Vol. 28, No 8, August 1989, pps. 865-871.			

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

Substitute for form 1449A/B/PTO				<b>Complete if Known</b>	
				Application Number	Not Yet Assigned
				Filing Date	18 AUG 2003
				First Named Inventor	Howard E. Rhodes
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	2	of	3	Attorney Docket Number	M4065.0103/P103-A

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.

NON PATENT LITERATURE DOCUMENTS					
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.			T <sup>2</sup>
CC	*Janesick, J., et al., "New advancements in charge-coupled device technology - sub-electron noise and 4096x4096 pixel CCDs," Proc. SPIE Vol. 1242, 1990, pps. 223-237.				
CD	*Kemeny, S.E., et al., "Update on focal-plane image processing research," Proc. SPIE Vol. 1447, 1991, pps. 243-250.				
CE	*Mendis, S., et al., "CMOS Active Pixel Image Sensor," IEEE Transactions on Electron Devices, Vol. 41, No. 3, March 1994, pps. 452-453.				
CF	*Mendis, S.K., et al., "A 128 x 128 CMOS Active Pixel Image Sensor for Highly Integrated Imaging Systems," 1993 IEEE, pps. 583-586.				
CG	*Mendis, S.K., et al., "CMOS Active Pixel Image Sensors for Highly Integrated Imaging Systems," IEEE Journal of Solid-State Circuits, Vol. 32, No. 2, February 1997, pps. 187-197.				
CH	*Mendis, S.K., et al., "Design of a Low-Light-Level Image Sensor with On-Chip Sigma-Delta Analog-to-Digital Conversion," Proc. SPIE Vol. 1900, July 1993, pps. 31-39.				
CI	*Mendis, S.K., et al., "Low-Light-Level Image Sensor with On-Chip Signal Processing," Proc. SPIE Vol. 1952, November 1993, pps. 23-33.				
CJ	*Mendis, S.K., et al., "Progress In CMOS Active Pixel Image Sensors," Proc. SPIE Vol. 2172, May 1994, pps. 19-29.				
CK	*Nakamura, J., et al., "CMOS Active Pixel Image Sensor with Simple Floating Gate Pixels," IEEE Transactions on Electron Devices, Vol. 42, No. 9, September 1995, pps. 1693-1694.				
CL	*Janesick, J., et al., "New advancements in charge-coupled device technology - sub-electron noise and 4096x4096 pixel CCDs," Proc. SPIE Vol. 1242, 1990, pps. 223-237.				
CM	*Kemeny, S.E., et al., "Update on focal-plane image processing research," Proc. SPIE Vol. 1447, 1991, pps. 243-250.				
CN	*Mendis, S., et al., "CMOS Active Pixel Image Sensor," IEEE Transactions on Electron Devices, Vol. 41, No. 3, March 1994, pps. 452-453.				
CO	*Mendis, S.K., et al., "A 128 x 128 CMOS Active Pixel Image Sensor for Highly Integrated Imaging Systems," 1993 IEEE, pps. 583-586.				
CP	*Mendis, S.K., et al., "CMOS Active Pixel Image Sensors for Highly Integrated Imaging Systems," IEEE Journal of Solid-State Circuits, Vol. 32, No. 2, February 1997, pps. 187-197.				
CQ	*Mendis, S.K., et al., "Design of a Low-Light-Level Image Sensor with On-Chip Sigma-Delta Analog-to-Digital Conversion," Proc. SPIE Vol. 1900, July 1993, pps. 31-39.				
CR	* Nixon, R.H., et al., "256 x 256 CMOS Active Pixel Sensor Camera-on-a-Chip," IEEE Journal of Solid-State Circuits, Vol. 31, No. 12, December 1996, pps. 2046-2050.				
CS	* Nixon, R.H., et al., "256x256 CMOS Active Pixel Sensor Camera-on-a-Chip," 1996 IEEE International Solid-State Circuits Conference, pps. 178-179.				
CT	* Panicacci, R., et al., "Programmable multiresolution CMOS active pixel sensor," Proc. SPIE Vol. 2654, March 1996, pps. 72-79.				
CU	* Panicacci, R.A., et al., "128Mb/s Multiport CMOS Binary Active-Pixel Image Sensor," 1996 IEEE International Solid-State Circuit Conference, pps. 100-101.				
CV	* Yadid-Pecht, O., et al., "CMOS Active Pixel Sensor Star Tracker with Regional Electronic Shutter," IEEE Journal of Solid-State Circuits, Vol. 32, No. 2, February 1997, pps. 285-288.				

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it contains a valid OMB control number.

Substitute for form 1449A/B/PTO				<i>Complete if Known</i>	
				Application Number	Not Yet Assigned
				Filing Date	18 AUG 2003
				First Named Inventor	Howard E. Rhodes
				Art Unit	N/A
				Examiner Name	Not Yet Assigned
Sheet	3	of	3	Attorney Docket Number	M4065.0103/P103-A

NON PATENT LITERATURE DOCUMENTS						
Examiner Initials	Cite No. <sup>1</sup>	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc.), date, page(s), volume-issue number(s), publisher, city and/or country where published.				T <sup>2</sup>
	CW	* Yadid-Pecht, O., et al., "Wide dynamic range APS star tracker," Proc. SPIE Vol. 2654, March 1996, pps. 82-92.				
	CX	* Zarnowski, J., et al., "Imaging options expand with CMOS technology," Laser Focus World, June 1997, pps. 125-130.				
	CY	* Zhou, Z., et al., "A Cmos Imager with On-Chip Variable Resolution for Light-Adaptive Imaging," 1998 IEEE International Solid-State Circuits Conference, pps. 174-175.				
	CZ	* Zhou, Z., et al., A Digital CMOS Active Pixel Image Sensor For Multimedia Applications, Proc. SPIE Vol. 2894, September 1996, pps. 282-288.				

\*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

<sup>1</sup>Applicant's unique citation designation number (optional). <sup>2</sup>Applicant is to place a check mark here if English language Translation is attached.